

## **WHAT IS CLAIMED IS:**

1                   1. A self-adhesive addition-crosslinking silicone composition, comprising  
2                   (A) diorganopolysiloxane(s) of the general formula (1)

$$3 \quad R_a^1 R_b^2 SiO_{(4-a-b)/2} \quad (1),$$

## 4 in which

5 R<sup>1</sup> is a hydroxyl radical or a monovalent, optionally halogen-substituted C<sub>1-20</sub>  
6 hydrocarbon radical optionally containing O, N, S or P atoms and free of  
7 aliphatically unsaturated groups.

**R<sup>2</sup>** is a monovalent, aliphatically unsaturated, optionally halogen-substituted C<sub>2-10</sub> hydrocarbon radical optionally containing O, N, S or P atoms.

10 b has a value from 0.003 to 2,

with the proviso that  $1.5 < (a+b) < 3.0$ , that on average at least two aliphatically unsaturated radicals  $R^2$  are present per molecule, and that the viscosity of the diorganopolysiloxane(s) (A), determined at  $25^\circ C$ , is  $1 \text{ mPa}\cdot\text{s}$  to  $40.000 \text{ Pa}\cdot\text{s}$ .

14 (B) organohydrogenpolysiloxane(s) of the general formula (2)

$$15 \quad R_c^3 R_d^4 R_e^5 H_f SiO_{(4-c-d-2e-f)/2} \quad (2).$$

16 in which

17  $R^3$  is a monovalent aliphatically saturated  $C_{1-20}$  hydrocarbon radical.

18 R<sup>4</sup> is (a) an optionally halogen-substituted monovalent C<sub>6-15</sub> hydrocarbon radical  
19 which contains at least one aromatic C<sub>6</sub>-ring, or

(b) a halogen-substituted, saturated monovalent  $C_{2-20}$  hydrocarbon radical optionally containing O, N, S or P atoms,

22 R<sup>5</sup> is a bivalent, optionally halogen-substituted C<sub>6-20</sub> hydrocarbon radical Si-bonded  
23 at both ends, optionally containing O, N, S or P atoms,

24 c, d, e and f denote positive numbers, with the proviso that the  
 25 organohydrogenpolysiloxane (B) contains on average 3 to less than 20 SiH groups per  
 26 molecule, that the relationship:  $0.05 < 100(d+e)/(c+d+e+f) < 12$  is fulfilled, and

27 that the viscosity of the organohydrogenpolysiloxane (B), determined at 25°C, is 1  
28 mPa·s to 100 Pa·s;

(C) organosilicon compound(s) having epoxy groups and hydrolyzable groups of the general formula (3)



32 and/or their partial hydrolysis products, in which

33 R<sup>7</sup> is a hydrogen radical, a hydroxyl radical or an optionally halogen- or cyano-  
34 substituted, saturated monovalent C<sub>1-20</sub> hydrocarbon radical optionally containing  
35 O, N, S or P atoms.

36 R<sup>8</sup> is an optionally halogen-substituted monovalent C<sub>2-20</sub> hydrocarbon radical  
37 containing at least one epoxy group, optionally containing O, N, S or P.

38 R<sup>9</sup> is a hydrolyzable, monovalent optionally halogen-substituted C<sub>1-20</sub> hydrocarbon  
 39 radical bonded to Si via an Si-O-C-, Si-O-N- or Si-N- link, optionally containing  
 40 O, N, S or P,

41 with the proviso that  $4 > g \geq 0$ ,  $4 > h > 0$ ,  $4 > i > 0$ ,  $4 \geq (h+i) > 0$  and  $4 \geq (g+h+i)$ ;  
42 and

43 (D) a hydrosilylation catalyst.

1                   2. The self-adhesive addition-crosslinking silicone composition of claim 1,  
2                   wherein the viscosity of the component (B) measured at 25°C, is 2 mPa·s to 1 Pa·s.

3. A process for the preparation of self-adhesive addition-crosslinked  
silicone elastomers, in which the self-adhesive addition-crosslinking silicone  
compositions of **claim 1** is heated to 30°C to 250°C

1                   4. A process for the preparation of self-adhesive addition-crosslinked  
2 silicone elastomers, in which the self-adhesive addition-crosslinking silicone  
3 compositions of claim 2 is heated to 30°C to 250°C

1 5. A self-adhesive addition-crosslinked silicone elastomer obtained by the  
process of claim 3.

1           6. A process for the preparation of self-adhesive addition-crosslinked  
2       silicone elastomers, in which the self-adhesive addition-crosslinking silicone  
3       compositions of claim 4 is heated to 30°C to 250°C.

1           7. A process for bonding an addition-crosslinkable silicone composition  
2       to a substrate, in which the self-adhesive addition-crosslinkable silicone compositions  
3       of claim 1 is applied to the substrate and crosslinked by heating to 30°C to 250°C.

1           8. A process for bonding an addition-crosslinkable silicone composition  
2       to a substrate, in which the self-adhesive addition-crosslinkable silicone compositions  
3       of claim 2 is applied to the substrate and crosslinked by heating to 30°C to 250°C.

1           9. A composite material obtained by the process of claim 7.

1           10. A composite material obtained by the process of claim 8.

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